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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/138,735	08/24/1998	GLAUCIA PARANHOS-BACCALA	WPB-36400B	4465

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EXAMINER	
NAVARRO, ALBERT MARK	
ART UNIT	**PAPER NUMBER**
1645	

DATE MAILED: 07/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/138,735	PARANHOS-BACCALA ET AL.	
	Examiner	Art Unit	
	Mark Navarro	1645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,5,7,8,10-27,32,34,36-40 and 43-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1 and 2* is/are allowed.

6)☒ Claim(s) *5,7,8,10-27,32,34,36-40 and 43-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 08/480,917.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114 was filed in this application after appeal to the Board of Patent Appeals and Interferences, but prior to a decision on the appeal. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on May 11, 2004 has been entered.

Claim Rejections - 35 USC § 112

1. The rejection of claims 5, 7-8, 10-26, 32, 34, and 36-40 under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement is maintained. Additionally this rejection is applied to newly added claims 43-46.

Applicants are asserting that claim 10 is not directed to any sequence having only 85% homology with SEQ ID NO: 8, 9, 10 and 12, instead the claim clearly recites that the primer consists essentially of one of the specifically recited sequences. Applicants further assert that all of the other rejected claims rejected on these bases should be withdrawn for the reasons set forth in the Appeal Brief.

First, Applicants assert that claim 10 is not directed to any sequence having only 85% homology with SEQ ID NO: 8, 9, 10 and 12, instead the claim clearly recites that the primer consists essentially of one of the specifically recited sequences. However,

as set forth previously, Applicants claims are not limited to the recited sequences, instead the claims recite "consisting essentially of..." This allows for multiple upstream and downstream nucleotides of undefined structure. It is these additional elements which are deemed to be non-enabled.

Second, Applicants assert that all of the other claims rejected on these bases should be withdrawn for the reasons set forth in the Appeal Brief. Applicants arguments are not found to be persuasive in view of the response set forth in the Examiner's Answer.

The claims are directed to probes for identifying Trypanosoma cruzi, consisting essentially of a sequence having at least 85% homology with a fragment of a nucleotide sequence that is identical or fully complementary to a sequence starting at nucleotide 1232 and ending at nucleotide 2207 of SEQ ID NO: 1 or the corresponding RNA sequence, wherein said probe contains at least 7 and no more than 100 nucleotides.

The specification states that substitutions, additions or deletions may be made to the defined sequences, however the specification provides no guidance as to what nucleotides may be changed without causing a detrimental effect to its ability to function as a probe or primer. Further, it is unpredictable as to which nucleotides could be added without effecting its function as a probe or primer.

Facts that should be considered in determining whether a specification is enabling, or if it would require an undue amount of experimentation to practice the invention include: (1) the quantity of experimentation necessary to practice the

invention, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims. *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1403 (Fed. Cir. 1988). The Federal Circuit has noted, however, that only those factors that are relevant based on the facts need to be addressed. *Enzo Biochem. Inc. v. Calgene Inc.* 188 F.3d 1362, 1371, 52 USPQ2d, 1129, 1135 (Fed. Cir. 1999).

Nucleic acids consist of 4 distinct nucleotides which bind in pairs of adenine (A) = thymine (T) and guanine (G) ≡ cytosine (C). Changing any one of these nucleotides (as permitted by 85% homology) directly effects the binding activity of the probe, this results in a probe/primer which will now bind to other molecules of unknown function and unknown origin. The unpredictability of randomly altering nucleotides creates uncertainty as to what DNA molecules will now hybridize to the probe. For instance, given that there are 4 nucleotides contained within DNA, and Applicants probes can be as short as 7 nucleotides, every $(4)^7$ or 1 in 16,384 nucleotide sequences of seven consecutive nucleotides will contain an exact match. This number grows logarithmically larger when factoring in the 85% homology limitations. Given that the human genome has approximately 2,900,000,000 nucleotides, Applicants probes will be hybridizing to multiple segments of many diverse DNA molecules. The scope of the claims must bear a reasonable correlation with the scope of enablement. In re Fisher, 166 USPQ 19, 24 (CCPA 1970).

Furthermore, Applicants specification does not provide any working examples of DNA probes/primers having 85% identity to SEQ ID NO: 1 or as short as 7 nucleotides.

Given the lack of guidance contained in the specification and the unpredictability for determining acceptable nucleotide insertions, substitutions, or additions, one of skill in the art would be forced into excessive experimentation to make or use the broadly claimed invention.

For reasons of record as well as the reasons set forth above, this rejection is maintained.

2. The rejection of claims 5, 7-8, 10-27, 32, 34, and 36-40, rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement is maintained. Additionally this rejection is applied to newly added claims 43-46. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention, a written description rejection.

Applicants are asserting that claim 10 is not directed to any sequence having only 85% homology with SEQ ID NO: 8, 9, 10 and 12, instead the claim clearly recites that the primer consists essentially of one of the specifically recited sequences. Applicants further assert that all of the other rejected claims rejected on these bases should be withdrawn for the reasons set forth in the Appeal Brief.

First, Applicants assert that claim 10 is not directed to any sequence having only 85% homology with SEQ ID NO: 8, 9, 10 and 12, instead the claim clearly recites that the primer consists essentially of one of the specifically recited sequences. However, as set forth previously, Applicants claims are not limited to the recited sequences, (i.e., consisting of) instead the claims recite "consisting essentially of..." This allows for multiple upstream and downstream nucleotides of undefined structure. It is these additional elements which are deemed to not satisfy the written description requirement.

Second, Applicants assert that all of the other claims rejected on these bases should be withdrawn for the reasons set forth in the Appeal Brief. Applicants arguments are not found to be persuasive in view of the response set forth in the Examiner's Answer.

The claims are directed to probes for identifying Trypanosoma cruzi, consisting essentially of a sequence having at least 85% homology with a fragment of a nucleotide sequence that is identical or fully complementary to a sequence starting at nucleotide 1232 and ending at nucleotide 2207 of SEQ ID NO: 1 or the corresponding RNA sequence, wherein said probe contains at least 7 and no more than 100 nucleotides.

Applicants solely described activity for the described fragments is that of a probe or primer. However each of these uses is dependent upon the precise "consisting of" structure being used. Substitutions upstream, downstream, or within the recited probe will have a profound effect upon the activity of the primer or probe. The scope of the claim includes numerous structural variants, and the genus is highly variant because a significant number of structural differences between genus members is permitted.

Although the specification states that these types of changes are routinely done in the art, the specification and claims do not provide any guidance as to what changes should be made. Since the disclosure fails to describe the common attributes or characteristics that identify members of the genus, and because the genus is highly variant, SEQ ID NO: 1 alone is insufficient to describe the genus. One of skill in the art would reasonably conclude that the disclosure fails to provide a representative number of species to describe the genus. Thus, Applicants were not in possession of the claimed genus.

For reasons of record as well as the reasons set forth above, this rejection is maintained.

Claim Rejections - 35 USC § 102

3. The rejection of claims 5, 8, 10-11, 17, 25-26, 32 and 39-40 under 35 U.S.C. 102(b) as being anticipated by Birkett et al is withdrawn in view of Applicants amendment.

The following new grounds of rejection are applied to the claims:

Claim Rejections - 35 USC § 112

4. Claims 45-46 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to

one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a new matter rejection.

The claims have been amended to recite "wherein said nucleic acid is isolated from nucleic acids that do not have at least 85% homology." Applicants have not pointed to support for this limitation. Accordingly, Applicant is required to demonstrate clear support (page and line number of the specification) or cancel the newly added material.

5. Claims 39-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims recite wherein said probe/primer contains at least "five contiguous nucleotides." However the claim upon which it depends already recites that the probe is 85% homologous to nucleotides 1232-2207 of SEQ ID NO: 1 and at least 7 nucleotides long. A claim which requires only five contiguous nucleotides is smaller than the required minimum as stated by the parent claim, and by having only five matches the 85% homologous limitation cannot be met by a probe having only five matches compared to a seven nucleotide sequence. Clarification is requested.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 5, 7-8, 11, 15, 17, 25-26, 32, 39-40, and 43-44 are rejected under 35 U.S.C. 102(b) as being anticipated by Longo et al.

The claims are directed to probes for identifying Trypanosoma cruzi, consisting essentially of a sequence having at least 85% homology with a fragment of a nucleotide sequence that is identical or fully complementary to a sequence starting at nucleotide 1232 and ending at nucleotide 2207 of SEQ ID NO: 1 or the corresponding RNA sequence, wherein said probe contains at least 7 and no more than 100 nucleotides.

Longo et al (US Patent Number 5,312,746) disclose of random octamer primers using the BioPrime DNA Labeling System. (See Column 12).

Given that the nucleic acid fragments disclosed by Longo et al contain virtually every possible combination of eight consecutive nucleotides, the disclosure of Longo et al is deemed to anticipate the claimed probes.

7. Claims 5, 7-8, 11, 15, 17, 25-26, 32, 39-40, and 43-46 are rejected under 35 U.S.C. 102(b) as being anticipated by Brown et al.

The claims are directed to probes for identifying Trypanosoma cruzi, consisting essentially of a sequence having at least 85% homology with a fragment of a nucleotide sequence that is identical or fully complementary to a sequence starting at nucleotide

1232 and ending at nucleotide 2207 of SEQ ID NO: 1 or the corresponding RNA sequence, wherein said probe contains at least 7 and no more than 100 nucleotides.

Brown et al (US Patent Number 5,256,545) disclose of a segment of DNA comprising the sequence C-A-C-A-C-C-A-C or the complement of such a sequence. (See Claim 1).

Given that the nucleic acid fragment disclosed by Brown et al is an exact match to 8 consecutive nucleotides of nucleotides 1232-2207 of SEQ ID NO: 1 of the instant invention, the disclosure of Brown et al is deemed to anticipate the claimed probes.

Claims 1-2 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Navarro whose telephone number is (571) 272-0861.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynette Smith can be reached on (571) 272-0864. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mark Navarro
Primary Examiner
July 14, 2004